

WHAT IS CLAIMED IS:

403/11

1. A quick-action locking device for an electrical power tool and designed for securing a working tool (3) to a motor-driven hollow spindle (2) located in a housing (1) of the power tool, the quick-action locking device comprising a locking spindle (4) axially displaceable in the hollow spindle (2) of the electrical power tool; a resilient member (5) for axially restraining the locking spindle (4); a locking flange (7) cooperating with the locking spindle (4) for securing the working tool (3) to the spindle (2) for joint rotation therewith; and a locking lever (6) provided at an end of the locking spindle (4) remote from the working tool (3) and pivotable about a pivot axis (9) between a locking position, in which the working tool (3) is secured to the spindle (2), and an exchange position in which the working tool (3) can be replaced, the locking lever (6) having a slider for applying a force to the locking spindle (4) for displacing the locking spindle (4) against a biasing force of the resilient member (5) upon a pivotal movement of the locking lever (6) from the locking position to the exchange position, the slider (8) having a contact region engageable with a contact surface provided at the end of the locking spindle (4) remote from the working tool (3), and the contact surface of the locking

spindle (4) having an extent, in a pivotal direction of the locking lever (6), corresponding to at least a radial distance (a) of the contact region of the slider (8) from the pivot axis (9) of the locking lever (6), multiplied by $\sin(\alpha)$ of an angle (α) formed, in the locking position of the locking lever (6), by a line, which defines the radial distance (α), with a longitudinal axis of the locking spindle (4).

2. A quick-action locking device according to claim 1, wherein the angle (α), which the line that defines the radial distance between the contact region of the slider (8) and the pivot axis (9) of the locking lever (6), forms with the longitudinal axis of the locking spindle (4), amounts to from 30° to 120° .

3. A quick-action locking device according to claim 2, wherein the angle (α) is equal to about 80° .

4. A quick-action locking device according to claim 1, wherein in the exchange position of the locking lever (6), the line that defines the radial distance between the contact region of the slider (8) and the pivot axis (9) of the

locking lever (6) forms with the longitudinal axis of the locking spindle (4) an end angle (β) that amounts from about 5° to about 30° .

5. A quick-action locking device according to claim 4, wherein the end angle (β) amounts to about 10° .

6. A quick-action locking device according to claim 1, wherein the slider (8) is formed as an annular support member having a predetermined radius (R) and an axis of which extends parallel to the pivot axis (9).

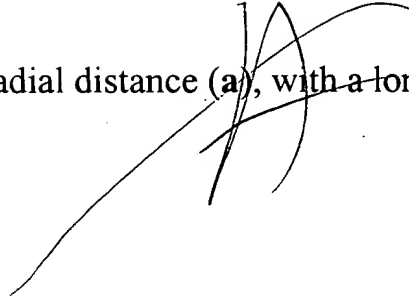
7. A quick-action locking device according to claim 6, wherein the predetermined radius (R) corresponds to .2 - .6 of the radial distance (a) between the contact region of the slider (8) and the pivot axis (9).

8. A quick-action locking device according to claim 7, wherein the predetermined radius (R) amounts to about .4 of the radial distance (a).

9. An electrical power tool, comprising a housing (1); a hollow motor-driven spindle (2) located in the housing (1); a working tool (3); and a quick-action locking device for securing the working tool (3) to the spindle (2),

the quick-action locking device including a locking spindle (4) axially displaceable in the hollow spindle (2) of the electrical power tool; a resilient member (5) for axially restraining the locking spindle (4); a locking flange (7) cooperating with the locking spindle (4) for securing the working tool (3) to the spindle (2) for joint rotation therewith; and a locking lever (6) provided at an end of the locking spindle (4) remote from the working tool (3) and pivotable about a pivot axis (9) between a locking position, in which the working tool (3) is secured to the spindle (2), and an exchange position in which the working tool (3) can be replaced, the locking lever (6) having a slider for applying a force to the locking spindle (4) for displacing the locking spindle (4) against a biasing force of the resilient member (5) upon a pivotal movement of the locking lever (6) from the locking position to the exchange position, the slider (8) having a contact region engageable with a contact surface provided at the end of the locking spindle (4) remote from the working tool (3), and the contact surface of the locking spindle (4) having an extent, in a pivotal direction of the locking lever (6), corresponding to at least a radial distance (a) of the contact region of the slider (8) from the pivot axis (9) multiplied by $\sin(\alpha)$ of angle (α) formed, in the locking position of the locking lever (6), by a line,

which defines the radial distance (a), with a longitudinal axis of the locking spindle (4).



Not
A1

11-11-11 11:11:11